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1958 MEETING IN CHICAGO

The Society of Illinois Bacteriologists will serve as hosts to the scientists assembled at the Fifty-eighth General Meeting of the Society of American Bacteriologists, which will be held at the Morrison Hotel, Chicago, from April 27 through May 1, 1958. All meetings will be held in the headquarters hotel.

The various local subcommittees are organized and functioning smoothly. Fifteen hundred sleeping rooms have been reserved at the Morrison for those attending the convention. Upwards of three hundred graduate students can likewise be accommodated at the headquarters hotel at a rate of \$3.50 per person with four persons in a room. The Smoker, banquet, and entertainment, will be held in the world-famous Terrace Casino, which is so terraced that everyone in the room will have an excellent view of the stage.

Commercial exhibit facilities are almost unlimited and it is expected that an all-time high will be reached in the number of exhibitors at the meeting. The Hostess Committee is planning an outstanding program for the visiting wives. Among the tours that are already scheduled is one to the famous Lobund Institute at Notre Dame on Wednesday, April 30, one through Abbott Laboratories on Tuesday, April 29, and one for the ladies through the world-famous Merchandise Mart.

Plan now to attend the meeting. Bring your wife or husband—they will be royally entertained while you are participating in scientific sessions.

CONFIRMED FUTURE MEETINGS

1958—Chicago, April 27–May 1

1959—St. Louis, May 10–15

1960—Philadelphia, May 1–5

1961—Chicago, April 30–May 4

TRAVEL FUNDS FOR VIIth INTERNATIONAL CONGRESS FOR MICROBIOLOGY

By this time everyone who plans to attend the 7th International Congress for Microbiology in Stockholm, August 4–9, 1958, should have submitted a preliminary application. This item concerns possible financial help for some of those who attend.

Since the last issue of *Bacteriological News* was prepared, the National Science Foundation has made a grant to the American Institute of Biological Sciences for travel to the microbiology congress. Grants from this fund will be made by a committee representing societies whose members are interested in the congress, with A.I.B.S. administering the grants. Directions and deadline for applying for a travel grant are given in the following notice from A.I.B.S.

The August, 1957, issue of *Bacteriological News* described a referendum on a special assessment of

50 cents per member to be used to help defray the travel expenses of American bacteriologists invited to be on the program of the congress. By the time you read this you likely have voted on the referendum. If a majority of members approves, about \$2,600 will be made available from the Society's treasury for travel grants to invited speakers. Persons who are eligible for grants from this source should apply to the A.I.B.S. in the manner described below. Funds authorized by the referendum will be disbursed by the President's Fellowship Committee of the S.A.B.

CONGRESS TRAVEL GRANTS ANNOUNCED

The National Science Foundation, A.I.B.S., and interested microbiological societies are cooperating to support the travel of a limited number of American Scientists to the 7th International Congress for Microbiology, August 4–9, 1958, to be held in Stockholm, Sweden. Application blanks are available from:

American Institute of Biological Societies

2000 P Street, N.W.

Washington 6, D. C.

Completed application forms must be returned to A.I.B.S. no later than January 1, 1958. Any active microbiologist in this country regardless of society affiliation is eligible.

CALL FOR NOMINATIONS FOR 1958 ELI LILLY AWARD

The announcement in the August, 1957, issue of *Bacteriological News* is repeated here for those who might have missed it. Only members of the Award Committee are ineligible to submit a nomination, although no person shall send in more than one nomination.

The award is made annually to a young microbiologist who has performed outstanding research in bacteriology or its related fields. To be eligible the nominee shall be less than 35 years of age on April 30, 1958 (birth date later than April 30, 1923).

Nominations for the 1958 award should be sent to Dr. Arthur Kornberg, Chairman, Eli Lilly Award Nominating Committee, Department of Microbiology, Washington University School of Medicine, Euclid Avenue and Kingshighway, St. Louis, Missouri. Four copies of all material should be submitted and must include:

1. Month, day and year of birth.
 2. Curriculum vitae.
 3. List of publications.
 4. Specific reference to the research upon which the nomination is based.
 5. Supporting letters, if possible.
- No reprints or manuscripts should be submitted.

For the purpose of this award, outstanding research is understood to be that which is of unusual

merit in the younger age group. The research is not to be judged in comparison with the work of more mature and experienced workers. In judging the nominees special consideration shall be given to the independence of thought and originality shown. Neither the nominee nor the nominator need be a member of the S.A.B.

All nominations will first be examined for eligibility by the Nominating Committee, which is composed of two members from the Society of American Bacteriologists and one each from the American Association of Immunologists and the American Society for Experimental Pathology. All eligible nominees then will be referred to the Award Committee, which selects the recipient of the award from the list of eligible candidates. The Award Committee also has representatives from the three societies named.

The award consists of \$1,000 and a bronze medal. The recipient presents the Eli Lilly and Company Award Address at a general session of the Society during its Annual Meeting.

To be considered for the 1958 award, all nominations must be in the hands of the Nominating Committee by January 15, 1958.

NEW DOCTORATE PROGRAM AT UNIVERSITY OF MISSOURI

The Department of Microbiology of the University of Missouri School of Medicine has been authorized by the Graduate School of the University to offer the Ph.D. in Microbiology. This advance is made possible by increased staff and facilities in association with the \$13,500,000.00 Medical Center recently established at Columbia, Missouri. The Department staff consists of Frank B. Engley, Jr., Ph.D., Pennsylvania; Chairman, Herbert S. Goldberg, Ph.D., Ohio State; Robert Keller, Ph.D., Pennsylvania; James T. Barrett, Ph.D., Iowa State; and Michael H. Ivey, MSPH, Ph.D., North Carolina. A wide range of courses is available through cooperation with the Department of Botany (Dr. Robert Brooks, Chairman) and in Dairy Husbandry (Dr. Joseph Edmondson), which are also offering the Ph.D. for the first time.

NOTICE

The International Association of Microbiological Societies has at its disposal limited funds, which it received from the International Union of Biological Societies, for assisting type culture collections of microorganisms. Curators of such collections who make their cultures internationally available and need financial help for this purpose are invited to make application soon. The specific needs should be defined and applications sent to the Secretary General of the I.A.M.S., Professor G. Penso, Instituto Superiore di Sanita, Viale Regina Elena, 299, Roma, Italy.

RESEARCH AND TEACHING TRAINEESHIPS

Fellowships and traineeships in the biological sciences leading to the degrees of Master of Science and Doctor of Philosophy are available to qualified applicants in the School of Dentistry, University of Pennsylvania. A program of graduate study, broad in scope and specialization, can be arranged in any of the biological science departments of the University. Support is furnished by a continuing grant from the National Institute of Dental Research, U. S. Public Health Service of the Department of Health, Education, and Welfare.

Candidates must qualify for admission in the Graduate School of Arts and Sciences. Remuneration will vary depending on the needs of the successful candidate. Application will be received at any time and may be initiated by a letter to the Chairman of the Committee on Traineeships, School of Dentistry, 4001 Spruce Street, Philadelphia 4, Pennsylvania.

NEW PRINTING OF "A CAREER IN BACTERIOLOGY"

Demand for the booklet "A Career in Bacteriology" continues good, necessitating a new (fourth) printing during the summer of 1957. This booklet is especially valuable in explaining bacteriology to high school and college students. It describes briefly the various phases of bacteriology, the educational requirements, and employment opportunities. The salary scales listed in earlier printings have been revised upward in line with current practices.

NEWS ABOUT OUR MEMBERS

I. Olitzky has resigned from the position of principal bacteriologist with the Philadelphia Department of Health Laboratory Section and has joined the staff of Cappel Laboratories, Inc., R.D. 2, West Chester, Pennsylvania.

Dr. Frank J. Roth, Jr., has recently joined the Department of Bacteriology, University of Miami, School of Medicine, and is organizing the Mycology program. This addition rounds out the activities of the department, which now include, in addition to Mycology, Bacterial Physiology under Dr. B. Sallman; Virology under Dr. M. M. Sigel; Parasitology under Dr. J. W. Beck; Immunology under Dr. V. R. Saurino. Graduate students are accepted for studies in all these microbiological specialties.

Dr. Delaphine Rosa Wyckoff has been named Professor of Bacteriology and Chairman of the Department of Botany and Bacteriology at Wellesley College. During the past summer, Dr. Wyckoff served as a member of a conference of 20 high school biology teachers and 10 college and university professors working on a source book of laboratory and field studies for high school biology

courses. This conference, which met at Michigan State University, is a project of the Committee on Educational Policies in the Division of Biology and Agriculture of the National Academy of Sciences-National Research Council. Dr. Wyckoff also is serving on the editorial panel for the Source Books of Laboratory and Field Studies for college introductory courses in the biological sciences.

NECROLOGY

Mr. Lawrence F. Lindgren, Instructor in Bacteriology and Pathology at the University of Nebraska, died June 21, 1957. Mr. Lindgren, a native of Wisconsin, was associated with the University of Nebraska as student and faculty member since 1912. He received his B.S. in agriculture from Nebraska in 1921, at which time he became associated with the Department of Bacteriology. He received his M.S. in bacteriology in 1927 and took graduate work at the University of Chicago and Iowa State College under Dr. Max Levine. He was an early member of the S.A.B. and was archivist for the Missouri Valley Branch.

Dr. Thorvald Madsen, one of the Society's oldest corresponding members, died in Copenhagen in April, 1957, at the age of 87. For many years he was head of the State Serum Institute of Denmark. Both before and after World War I he was a leader in international efforts to control disease.

Madsen first became interested in bacteriology and medicine through newspaper reports of the

work of Pasteur and Lister. He studied under Professor C. J. Salomonsen, later becoming his assistant and finally succeeding him as head of the Serum Institute. After World War I Dr. Madsen became president of the League of Nations Health Organization, a position he held for five terms. Even as late as 1947-50 he was chief of UNICEF's Italian division, where he led the large scale vaccination campaign against tuberculosis.

NATIONAL SCIENCE FOUNDATION RESEARCH GRANTS

The Division of Biological and Medical Sciences of the National Science Foundation announces that the next closing date for receipt of research proposals in the life sciences is January 15, 1958. Proposals received prior to that date will be reviewed at the Winter meetings of the Foundation's Advisory panels and disposition will be made approximately four months following the closing date. Proposals received after the January 15, 1958, closing date will be reviewed following the Spring closing date of May 15, 1958.

In addition to funds for the support of basic research in the life sciences, limited funds will be available during the current fiscal year for the support of research facilities and programs at biological field stations.

Inquiries should be addressed to National Science Foundation, Washington 25, D. C.

LOCAL BRANCH ACTIVITIES

REPORTS FROM LOCAL BRANCH MEETINGS

Northern California and Hawaii Branch (J. L. Stokes, Secretary-Treasurer) and Southern California Branch (Dean Anderson, Secretary-Treasurer)

August 27, 1957. The two branches held a joint session during the meetings of the Pacific Division of the A.A.A.S. and the American Institute of Biological Sciences at Stanford University, Palo Alto, California. After the following program, members of the branches were invited to attend the banquet of the Society of Industrial Microbiologists, where Dr. R. Y. Stanier spoke on "Fashions and Trends in Microbiological Research."

1. Progress report on transport and recovery of beta hemolytic streptococci on dacron pharyngeal swabs and filter paper. Lois H. Lindberg and Nell F. Hollinger, School of Public Health, University of California, Berkeley.

2. Characterization of a variant pox virus haemagglutination inhibitor in normal serum. Dolores J. Gerber and H.M.S. Watkins, Naval Biological Laboratory, Oakland.

3. The specificity of serological tests for *Toxoplasma gondii*. John F. Kessel, Department of Infectious Diseases, University of California at Los Angeles.

4. The selective and differential effects of cycloheximide (actidione R) in media for numerous strains of *Coccidioides immitis*. Milton Huppert and Leila J. Walker, Microbiological Research Unit, Veterans Administration Hospital, San Fernando.

5. Digestion of adsorbed protein by bacteria. Eva F. Estermann and A. D. McLaren, Department of Soils and Plant Nutrition, University of California, Berkeley.

6. The enzymatic hydrolysis of oligosaccharides from chitin. Leslie R. Berger, Department of Bacteriology, University of California, Davis.

7. Aryl sulfatase activity of various species and strains of *Mycobacteria* and *Nocardiae*. Lawrence

G. Wayne and William J. Juarez, Microbiological Research Unit, Veterans Administration Hospital, San Fernando.

8. Permeability of *Azotobacter vinelandii*. A. G. Marr and S. A. Robrish, Department of Bacteriology, University of California, Davis.

9. Enzymatic organization of *Azotobacter vinelandii*. S. A. Robrish and A. G. Marr, Department of Bacteriology, University of California, Davis.

10. Studies upon the ecology of the acetic acid bacteria. Reese H. Vaughn and Ira J. Mehlman, Department of Food Technology, University of California, Davis.

11. Inhibition of threonine biosynthesis by threonine and other amino acids. E. H. Wormser and A. B. Pardee, Virus Laboratory, University of California, Berkeley.

12. A study of the apiculate yeasts. M. W. Miller and H. J. Phaff, Department of Food Technology, University of California, Davis.

Missouri Valley Branch (J. O. Harris,
Secretary-Treasurer)

April 5, 1957. Oklahoma State University in Stillwater was the site of the two-day meeting. Dr. J. B. Clark presided over the afternoon scientific program.

1. The role of divalent ions in genetic transfer in *E. coli* K-12 and *S. typhimurium*. C. Kirchner and A. Eisenstark, Department of Bacteriology, Kansas State College, Manhattan.

2. The effect of Diethylstilbestrol on the oxidation of various substrates by *Aerobacter aerogenes*. Norman N. Durham and Margie D. Perry, Department of Bacteriology, Oklahoma A&M College, Stillwater.

3. The assembly, testing, and use of an automatic turbidity recorder. John O. Harris, Department of Bacteriology, Kansas State College, Manhattan.

4. The use of salt in carrying bacterial cultures. H. L. Chance, Department of Bacteriology, University of Oklahoma, Norman.

5. Cultivation of *R. akari* *in vitro*. R. A. Consigli, D. Paretsky, and C. M. Downs, Department of Bacteriology, University of Kansas, Lawrence.

6. Continued studies on the interrelationships of *B. anthracis* to *B. cereus* and *B. cereus* var. *mycoides*. II. Immunologic and bacteriophage specificity. Eric R. Brown and E. Lee Treece, Department of Bacteriology, University of Kansas, Lawrence.

7. Production of an antifungal agent by a species of streptomycetes. Tom Santoro and Elliot C. Dick, Department of Bacteriology, University of Kansas, Lawrence.

8. The bacterial oxidation of components of soluble oil emulsions. H. Pivnick, L. Ellis, R. Samuel-Maharajah, L. Nendelow and L. Ruth, Department of Bacteriology, University of Nebraska, Lincoln, Nebraska.

9. Microbiology in the Tokyo area. A. Eisen-

stark, Department of Bacteriology, Kansas State College, Manhattan.

10. Inhibition of DPNase activity by p-Aminobenzoic acid and related compounds. A. L. Guaridiola and D. Paretsky, Department of Bacteriology, University of Kansas, Lawrence.

11. What happens to *Salmonella* species during sewage treatment. Wilfred V. G. Chong and Thomas H. Lord, Department of Bacteriology, Kansas State College, Manhattan.

12. Variation in radiation response. Janice Frady and J. B. Clark, Department of Bacteriology, University of Oklahoma, Norman.

13. Continuous growth of swine and rabbit tissues *in vitro*. A. Werder, Bette Hamilton, Marge Ryll and Julie Ann Lindstrom, Department of Medical Microbiology, University of Kansas Medical School, Kansas City.

14. Transformations in nitrogen added to semi-arid soils of Oregon. L. J. Damsky, C. M. Gilmour and W. B. Bollen, Department of Bacteriology, Kansas State College, Manhattan, and Department of Bacteriology, Oregon State College, Corvallis.

15. *Herpes simplex* virus in the brains of newly hatched chicks. Joseph Z. Ciegeleisen, and L. Vernon Scott, Department of Bacteriology, University of Oklahoma Medical School, Oklahoma City.

16. Certain beneficial effects of sodium in the nutrition of lactic acid bacteria. John N. Mills, Wang Lim Chun, and Robert J. Sirny, Department of Agricultural Chemistry, Oklahoma A&M College, Stillwater.

17. Further studies with cold-adapted genetic variants of polio viruses. George R. Dubes, H. A. Wenner, and Margaret Chapin, University of Kansas Medical Center, Kansas City.

18. Studies on a mouse brain component causing enhancement of the virulence of GDVII Virus *in vivo*. Remi Amelunxen, A. Werder and Thorkil Jensen, Department of Medical Microbiology, University of Kansas, Medical School, Kansas City.

Dr. Orville Wyss, University of Texas, addressed the branch following a banquet in the evening. His topic was "Radiation Damage in Microorganisms".

April 6, 1957. Dr. A. E. Eisenstark presided over the morning scientific session.

19. The oxidation of o-Nitrobenzoic Acid by *Flavobacterium* sp. Yang-Shien Ke and Norman N. Durham, Department of Bacteriology, Oklahoma A&M College, Stillwater.

20. Serum proteins and the transplantation phenomena in animals. A. Werder, Perry Morgan and Creighton Hardin.

21. (Motion Picture) Active anaphylaxis in the mouse sensitized with bovine albumin-adjuvant

emulsion. Perry Morgan, University of Kansas Medical Center, Kansas City.

22. Methane fermentation and its relationship to rumen microbiology. A. H. Yahiro and L. R. Fina, Department of Bacteriology, Kansas State College, Manhattan.

23. Synthesis of some nitrogen compounds by cell free preparation of *E. coli*. M. L. Danguilan and D. Paretsky, Department of Bacteriology, University of Kansas, Lawrence.

24. The effect of fragmentation in *Nocardia corallina* on radiation response. Marilyn Rogers and J. B. Clark, Department of Bacteriology, University of Oklahoma, Norman.

25. Resistance to an amino acid analogue by *Lactobacillus delbruckii*. M. N. Mickelson and Reid S. Flippin, Midwest Res. Inst. and Department of Biology, University of Kansas City, Kansas City.

26. The free energy of hydrogen ion adsorption by *Azotobacter vinelandii*. Richard M. Kline and J. O. Harris, Department of Bacteriology, Kansas State College, Manhattan.

27. Nitrification in acid soils. Deane Weber, Department of Bacteriology, Kansas State College, Manhattan.

28. Flocculation tests for tularemia. Charles A. Hunter and Ruth Burdorff, Public Health Labs., Kansas State Board of Health, Topeka.

29. Microflora of prepackaged luncheon meat. Robert L. Hendrickson and R. F. Brooks, Meat Lab., Department of Animal Husbandry, Oklahoma A&M College and Department of Botany, University of Missouri, Columbia.

At a business meeting following the scientific program the following officers were elected for 1957-58: *President*: J. B. Clark, University of Oklahoma, Norman, Oklahoma; *Vice-President*: V. D. Foltz, Kansas State College, Manhattan, Kansas; *Councillor*: C. E. Georgi, University of Nebraska, Lincoln, Nebraska; *Secretary-Treasurer*: J. D. Harris, Kansas State College, Manhattan.

Central New York Branch (Richard D. O'Neill, Secretary)

May 18, 1957. The 72nd Semi-Annual Meeting of

the Branch was held at Roswell Park Memorial Institute, Buffalo, New York.

1. The Use of a Modified Herrold's Egg Yolk Medium for Tuberculosis Cultures. L. J. Griffith, S. A. Denaro and F. E. Will, Veterans Administration Hospital, Batavia, N. Y.

2. Standardized Procedures for Preparing Ultrathin Sections of Bacteria. T. Hashimoto and H. B. Naylor, Laboratory of Bacteriology, College of Agriculture, Cornell University, Ithaca, N. Y.

3. Capsular Substance of Group C Meningococcus. R. Glenn Watson, Department of Bacteriology, University of Rochester, School of Medicine, Rochester, N. Y.

4. The Inhibitory Effect of Amino Acids on the Growth of a Thermophilic Strain of *Bacillus brevis*. T. C. Demny and D. G. Lundgren, Department of Bacteriology and Botany, Syracuse University, Syracuse, N. Y.

5. Catalase Activity in *Pediococcus cerevisiae* as Related to Hydrogen Ion Activity. R. R. Gutekunst, E. A. Delwiche and H. W. Seeley, Laboratory of Bacteriology, College of Agriculture, Cornell University, Ithaca, N. Y.

6. Biochemistry of Nitrifying Bacteria—A Review of Recent Russian Research. D. G. Lundgren and A. E. Krikszens, Department of Bacteriology and Botany and Microbiological and Biochemical Research Center, Syracuse University, Syracuse, N. Y.

A Symposium composed of members of the staff of the Roswell Park Memorial Institute was held. The subject was, "Applications of Microbiology to Cancer Research":

A. Metabolism

1. Purine and Pyrimidine Antagonists. Martin Pine.

2. Antibiotics. Irving Slotnick.

3. Folic Acid Antagonists. Charles Nichol.

B. Genetics

1. The Use of Bacterial Mutants in Screening Potential Anti-Tumor Agents. Maude Lobeck.

2. Concepts of Microbial Genetics Applied to Genetics of Mammalian Cells. Robert Guthrie.

C. Discussion. Ellen Pine.

BOOKS AND REVIEWS

Advances in Enzymology, F. F. Nord, Editor, New York: Interscience Publishers, Inc., 1957, 435 pp., \$9.00.

Oral Microbiology and Infectious Disease, G. W. Burnett and H. W. Scherp, Baltimore: The Williams and Wilkins Co., 1957, 589 pp., \$11.00.

Principles of Immunology, J. E. Cushing and D. H. Campbell, New York: McGraw-Hill Book Co., 1957, 344 pp., \$6.50.

Fundamentals of Microbiology, 6th Edition, Martin Frobisher, Philadelphia: W. B. Saunders Co., 1957, 617 pp., \$6.50.

Methods in Enzymology, Volume III. S. P. Colowick and N. O. Kaplan, Editors, New York: Academic Press, Inc., 1957, 1154 pp., \$26.00.

The stated purpose of the present volume is to "describe the synthesis, isolation, qualitative detection, quantitative determination, and properties of the corresponding substrates and coenzymes." The reviewer is in full accord with the authors' comment that "the present volume is essential for maximal usefulness of Volumes I and II" which deal with the preparation and assay of the relevant enzymes. This inconvenience is minimized by extensive cross-references of the material in Volume III with that in Volumes I and II.

The contributions of one-hundred and fifty-one contributors are summarized, sometimes all too briefly, in seven major sections: carbohydrates, lipids and steroids, citric acid cycle components, proteins and derivatives, nucleic acids and derivatives, coenzymes and related phosphate compounds and determination of inorganic compounds.

As might be expected from a methodology handbook of this kind, carbohydrates, amino acids and coenzymes command the major emphasis. In addition to dealing with the analytical procedures and methods of preparation of the familiar compounds of intermediary metabolism, some of the recent metabolites, as carbamyl phosphate and nucleotide di- and triphosphates, are included.

It is not surprising from recent trends in biochemistry that an increasing emphasis has been directed towards nucleic acids and their derivatives. Although the authors have recognized this by devoting 140 pages to this subject, the reader will unfortunately find it necessary to refer frequently to the literature for necessary experimental procedures and information. It is unfortunate, for example, that only the ultraviolet absorption spectrum of the nucleoside-5-triphosphates are given and that only brief reference is given to the methods for separation of the desoxynucleotides.

The magnitude of the subject matter, from preparation of hydroxyamino acids and L- α -glycerophosphate to the determination of molybdenum, is so broad that any biochemist will find useful material. For the bacterial physiologist, there are several sections devoted to microbiological problems: Microbiological Determination of Amino Acids, by Snell; Isolation of Sodium Deoxyribonucleate in Biologically Active Form from Bacteria, by Hotchkiss; Microbiological Assay Method for Deoxynucleosides, Deoxynucleotides, and Deoxynucleic Acid, by Hoff-Jørgensen; and Microbiological Methods for Determining Magnesium, Iron, Copper, Zinc, Manganese and Molybdenum, by Nicholas.

The volume is well edited, the printing job excellent, but the price of the book is too high for

the reader faced with the prospect of yet another volume in the series.

HARLYN HALVORSON

Dairy Microbiology. E. M. Foster, F. E. Nelson, M. L. Speck, R. N. Doetch and J. C. Olson, Jr. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1957. 492 pp., \$10.00.

This book is both fundamental and practical in approach. Basic concepts of microbiology are discussed in the first four chapters and include introductory remarks on the classification of dairy microorganisms and their biological properties. This places the field of dairy microbiology in proper perspective with relation to other phases of microbiology. Microorganisms commonly found in milk and milk products are described, first according to taxonomic relationship and then according to physiological changes produced in milk. This chapter is well-organized, direct in approach and illustrated with excellent photomicrographs and electron micrographs for the principal genera discussed. Considerable emphasis is given to control of the undesirable types of organisms and growth of desirable species. Included is a discussion on inhibition and destruction of microorganisms by physical and chemical methods, a basic problem in production and preservation of practically all dairy products.

The authors next deal with the different phases of dairy microbiology grouped according to methods and products involved. Microbiological methods of examining dairy products are described together with advantages and disadvantages of each. This chapter contains sufficient discussion on principles involved and detail in method to suffice for most laboratory workers. It might have been desirable to include more detail on bacteriophage and antibiotic detection for the benefit of the dairy plant laboratory since reference material on these subjects is widely scattered and not generally available to such persons.

The microbiology of market milk and related products is discussed with emphasis on quality control regulations and programs as well as specific processing problems. Considerable detail is devoted appropriately to thermophilic, thermophilic, coliform and psychrophilic bacteria.

The chapters on condensed, concentrated and dry milk products, ice cream, lactic starter cultures, fermented milks, cheese, and butter include methods of manufacture, common microbial defects, as well as standards and other requirements for high quality production. The information with few exceptions is complete and up-to-date. The chapter on microbiology of cheese for example includes description of essential cheesemaking steps, preservation, spoilage, cheese-borne diseases, and additional detail on manufacture and microbial defects of a variety of specific cheeses. It represents

one of the most authoritative and complete treatments of the subject available. The chapter on lactic starter cultures provides an excellent description of culture defects and general procedures for handling cultures. It might be enhanced somewhat by including more specific references to research mentioned in the discussion. Some detail also lacking on methods of determining diacetyl and mode of formation of diacetyl in cultures.

In general the authors have succeeded admirably in providing a combination text book and handy reference manual for the dairy farm and plant worker. It has an interesting approach to the subject of dairy microbiology and should prove a valuable aid both to the student in bacteriology and to the dairy industry.

P. R. ELLIKER

Immunology and Serology, Philip L. Carpenter, Philadelphia: W. B. Saunders Co., 1956, 351 \$6.50.

This concise and clearly written book provides a good introduction to the traditional concepts and problems of immunology for students making their first contact with the subject.

The author has shown much thought in the balance he has achieved in this small book which compensates for the difficulties he must have encountered in space limitations. The reviewer does not mean to disparage when he remarks on the occasional lapse into relatively obsolete terminology and on the perhaps excessive brevity in presenting certain observations and the absence of alternate views. A somewhat more biologically oriented treatment might be attempted in subsequent editions in order for the book to reach a larger audience. However, the author has apparently written this book as an aid in presenting the subject to his own classes and therefore the book will be of considerable use to those who approach the subject from similar points of view.

SANFORD S. ELBERG

Enzyme, Antigen and Virus, A Study of Macromolecular Pattern in Action, F. Macfarlane Burnet, New York: Cambridge University Press, 1956, 193 pp., \$3.50.

Another in a long series of provocative works by Burnet, this monograph is, first, a revision of *Production of Antibodies* (Burnet and Fenner, 1949) and, second, the argument for a "Communications Theory" of protein biosynthesis promised in the author's recent volume, *Principles of Animal Virology* (Burnet, 1955). The first of these objectives is admirably accomplished with the presentation of a very strong case for specific antibody formation by antigen induced, genetic changes in plasma cells in contrast to the alternative, Pauling-Horowitz theory, which proposes

that antigen itself becomes a permanent template for antibody formation.

Evidence for the analogy between specific antibody formation and the production of adaptive enzymes is amplified and the analogy is then extended to include the viruses. Recent and highly significant work of Medowar and his associates on induced tolerance to homografts, of Watson and Crick on the structure of DNA and the accumulating information from many laboratories on the relation of DNA to bacteriophage synthesis, RNA to plant virus and protein synthesis, and the possible relations of both RNA and DNA to animal viruses, are carefully considered. Much of the experimental data comes from work with the influenza viruses in Burnet's laboratory and one assumption, the existence of an eclipse phase early in the cycle of infection for all animal viruses, may be challenged. Unfortunately, the results of the then current studies of the infectivity of purified RNA from tobacco mosaic virus were not yet available. Even so, Burnet presents a most convincing case (particularly appealing to those with a background in medical biology) for protein synthesis, antibody, adaptive enzyme or virus, by a common pattern.

This pattern becomes the basis for the monograph's second objective, a communications theory, in which the protein and nucleic acid patterns responsible for transmission of information permitting replication and synthesis of macromolecules are coded. One wonders whether diagrammatic models based on very incomplete chemical information will be at all acceptable to chemists in this field and whether the suggestion of structural arrangements may not be more misleading than helpful to many biologists. However that may be, Burnet has selected experimental data from remarkably diverse areas and has woven this information into a plausible pattern, a most commendable objective in a period of increasing specialization. The book will find a wide audience as a competent and stimulating review of current work and, as Burnet hopes, may stimulate a few more imaginative thinkers to effective exploration at "the advancing edge."

A. F. RASMUSSEN, JR., M. D.

Annual Report on Wood Protection 1955. Günther Becker and Gerda Theden, Editors, Berlin-Dehlem, Unter den Eichen 87, Germany.

This digest of world literature on the protection of wood against deterioration was founded by Willy Kinberg about 20 years ago, and has been continued by the present editors since 1951. As in previous issues, the literature abstracted in the 1955 Edition, released in November, 1956, is confined to publications that present new data of value in developing and applying protective measures. Most of these publications appeared in

1955 or early 1956; the remainder represent previously overlooked papers from the 1952-1954 period. Beginning with this edition, the Report is expected to be released annually again.

In general content, the new Edition comprises about 300 pages divided into 4 sections—classification, bibliography, and index. The abstracts are presented under the following headings: Fundamentals of Wood protection; Wood-Destroying Organisms and Their Influence; Wood Protection Against Organisms; Fire-Retarding Wood Protection; Wood Protection Against Chemical Agents; Economical Aspects and Statistics; Reports on Scientific Institutes; Associations, Conventions, International Cooperation; and Personal Notes.

The abstracts, which range from 20 to 200 or more words, are given in both German and English, on facing pages. They carry the author's name and are numbered consecutively, which makes it easy to trace each abstract to its literature source in the

bibliography. A new feature is the inclusion of marginal notes to facilitate the search for abstracts of special interest within the broad subject groupings. Also, literature on marine organisms in wood is covered intensively for the first time. With few exceptions, the survey made of literature seems adequate, quality of abstracts is high, and the arrangement of literature under the subject-matter headings seems logical.

The task undertaken by the editors is a large one that has its only reward in the service it performs. Such service undoubtedly will be great if copies of this and subsequent reports are obtained by, or made accessible to, all research workers engaged in wood protection problems. The editors certainly warrant at least this evidence of encouragement and gratitude.

R. M. LINDGREN
Forest Products Laboratory
Madison, Wisconsin

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DEADLINE FOR RECEIPT OF ABSTRACTS OF PAPERS FOR 1958 MEETING JANUARY 16, 1958

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